

Notice of Allowability

Application No.

10/682,537

Examiner

Jeff Piziali

Applicant(s)

YASUKAWA, MASAHIRO

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 30 June 2006.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/091,544.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____



Jeff Piziali
14 September 2006

DETAILED ACTION

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/091,544, filed on 1 July 1998.

Allowable Subject Matter

2. Claims 1-11 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The present invention comprises a substrate having a pixel electrode. The closest prior art, *Shintani et al* (US 5,978,056 A) discloses a substrate [Fig. 4, 1] having a pixel electrode [Fig. 4, 8a] , comprising: a substrate [Fig. 4, 1]; a plurality of pixel units [Fig. 2; 130], each pixel unit including a pixel electrode [Fig. 4, 8a] useable as a reflective electrode and a switching element [Fig. 4, 2] electrically connected to the pixel electrode, the pixel units being arranged in a matrix pattern on the substrate (see Fig. 2), the switching element having a terminal electrode [Fig. 4, 7] forming a conductive layer, a contact hole [Fig. 4, 9a] provided between the pixel electrode and the conductive layer that electrically connects the pixel electrode and the terminal electrode; a light-shielding layer [Fig. 4, 51] having an opening surrounding a portion in which the contact hole is formed and having no opening in regions between adjacent pixel electrodes, the light-shielding layer being formed between the pixel electrode and the conductive layer; and an underlying insulating layer [Fig. 4, 4b] being formed below the pixel electrodes [Fig. 4, 8a] (see

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Column 6, Line 30 - Column 7, Line 53), and in regions between adjacent pixel electrodes of the plurality of pixel units, a groove [Figs. 4 and 13; v-shaped portion of 8b] having a substantially V-shaped surface relative to an upper surface of the underlying insulating layer being formed in regions between adjacent pixel electrodes [Fig. 13, 8a] on a surface of the underlying insulating layer [Fig. 13, 46], the V-shaped surface for reflecting obliquely the light vertically incident [Fig. 13, 42] which enters a space between the pixel electrodes (see Column 9, Line 64 - Column 10, Line 27).

However, Shintani does not expressly teach that the groove has no flat surface on bottom. Distinguishingly, the *instant invention* teaches a groove [Fig. 4(b); 19] having no flat bottom surface and having a substantially V-shaped surface relative to an upper surface of an underlying insulating layer [Fig. 4(b); 13] being formed in regions between adjacent pixel electrodes on a surface of the underlying insulating layer. This distinct structural arrangement has been incorporated into all three pending independent claims (i.e. claims 1, 10, and 11), thereby rendering them allowable.

Any comments considered necessary by the applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali
14 September 2006



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600